

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11)Publication number: **10300959 A**

(43)Date of publication of application: **13.11.98**

(51)Int. Cl. **G02B 6/122**  
**G02F 1/025**  
**H01S 3/18**

(21)Application number: **09113829**

(22)Date of filing: **01.05.97**

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(54)**SEMICONDUCTOR OPTICAL WAVEGUIDE**  
**FUNCTIONAL ELEMENT**

(57)Abstract:

PROBLEM TO BE SOLVED: To make the element low in reflectivity by using the reflectivity reducing technique utilizing a dielectric multilayer film jointly by making the direction of waveguide of a function processing part different from the direction of optical waveguide of a light input/output end face part.

SOLUTION: The radius of curvature  $R$  of an active layer part 131 is  $500\text{ }\mu\text{m}$  of constant curvature and the part is gently curved with an angle of  $10^\circ$ . Consequently, the angle  $\theta$  made between the active layer part stripes 131 becomes  $10^\circ$  and the waveguide direction of the active layer part 131 is different from the optical waveguide direction of a light input/output end face part. If the light input/output end face part and the active layer part stripe 131 make some angle, the curvature of the whole active layer part stripe 131 makes no problem. The radius  $R$  of curvature is not made constant and may be gradually changed. For example, since the larger the optical trapping coefficient is, the smaller the loss due to the curvature becomes, the

radius of curvature may be changed according to the change of a spot size.

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